

208020 " <TEST>DOT

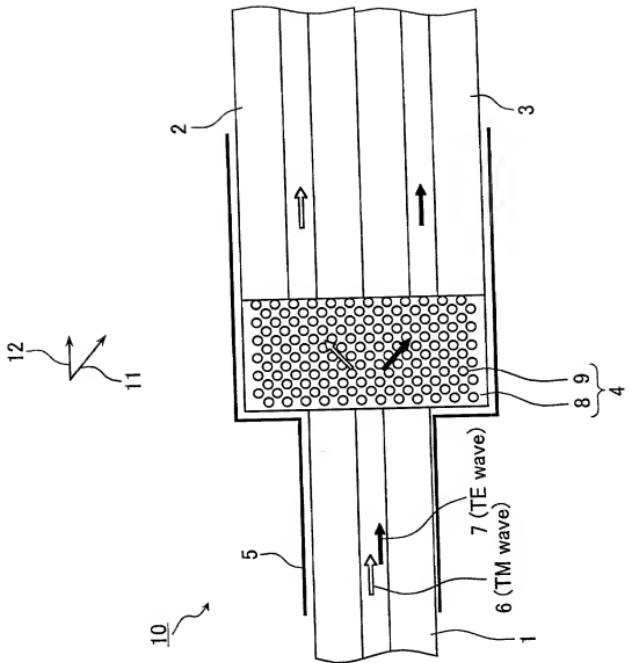
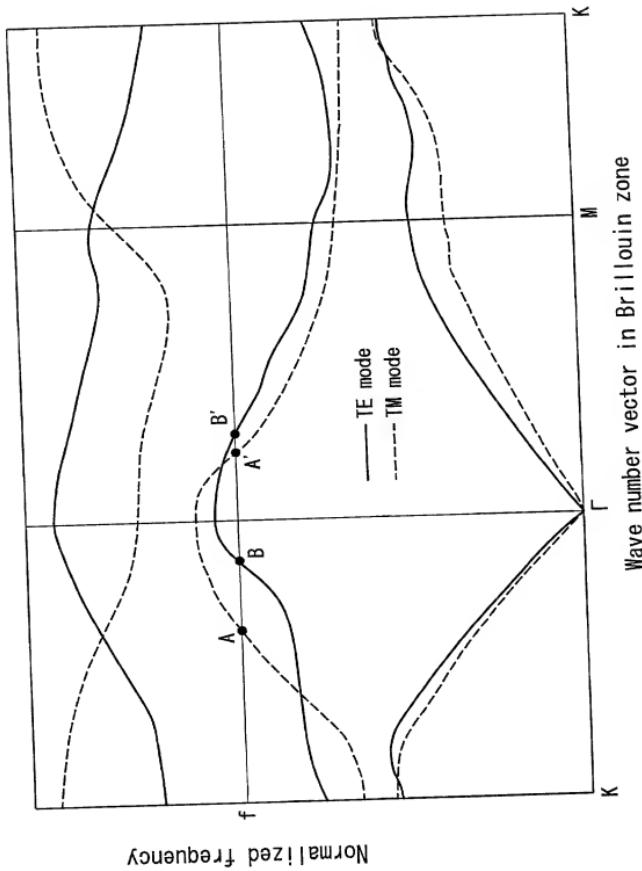


FIG. 1

Inventor: Hidenobu HAMADA
Docket No.: 10873.878US01
Title: OPTICAL DEVICE
Attorney Name: Douglas P. Mueller
Phone No.: 612 371 5237
Sheet 1 of 22

202020 "00071647" 202020



Wave number vector in Brillouin zone

FIG. 2

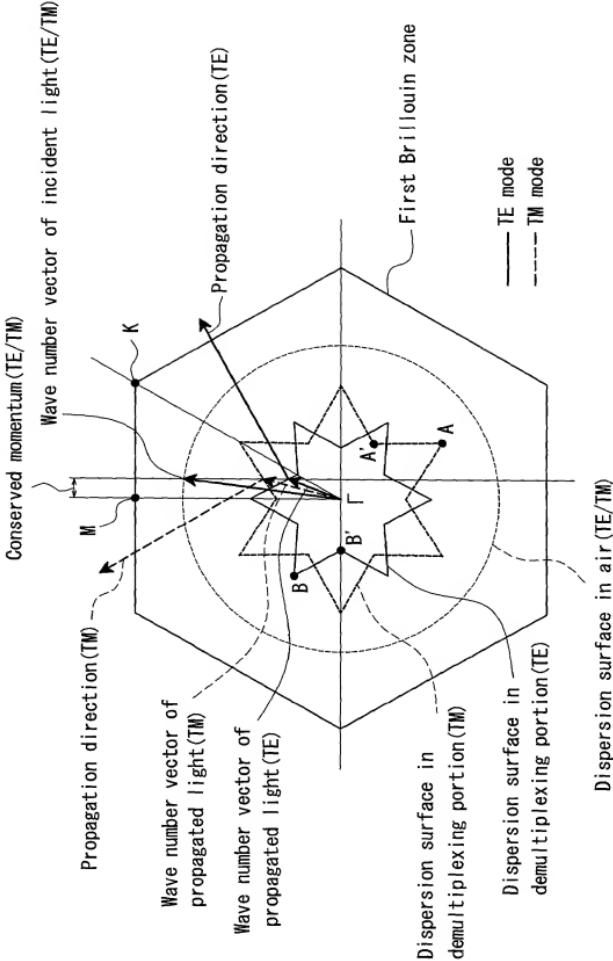


FIG. 3

FIG. 4A.

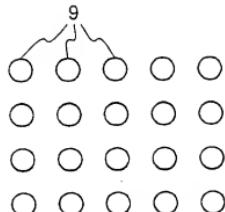


FIG. 4B

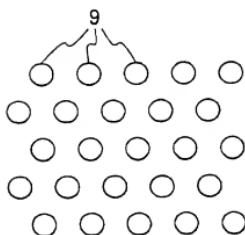
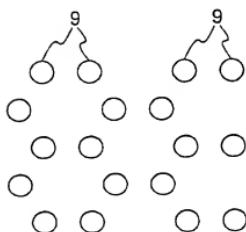


FIG. 4C



10071617 .020802

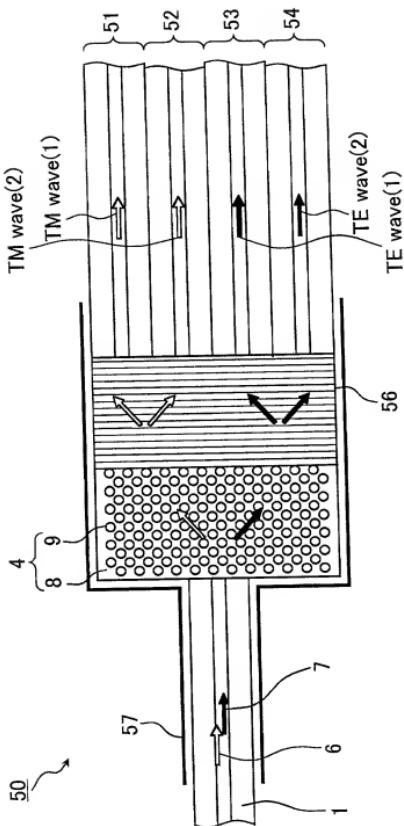


FIG. 5A

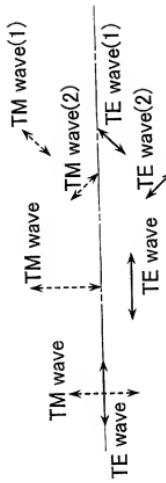


FIG. 5B

2008020 "ZT9T<BOT

Inventor: Hidenobu HAMADA
Docket No.: 10873.878US01
Title: OPTICAL DEVICE
Attorney Name: Douglas P. Mueller
Phone No.: 612 371 5237
Sheet 6 of 22

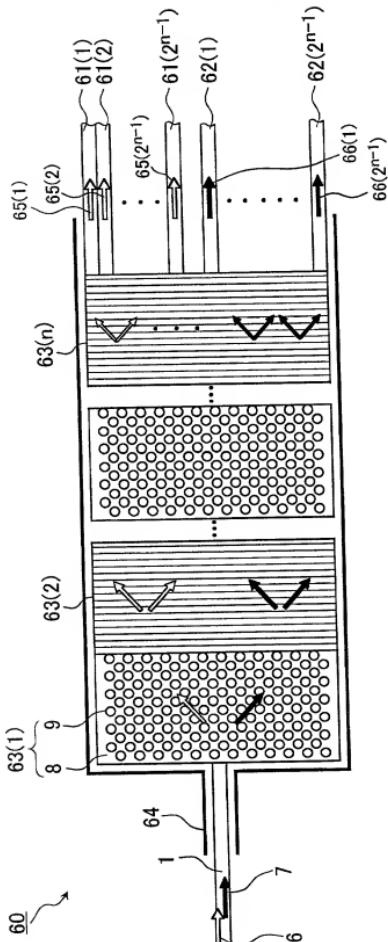
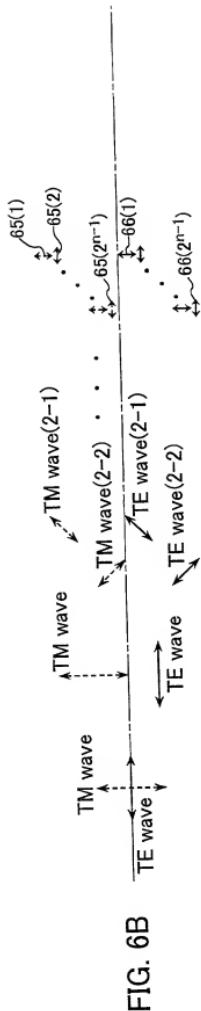


FIG. 6A



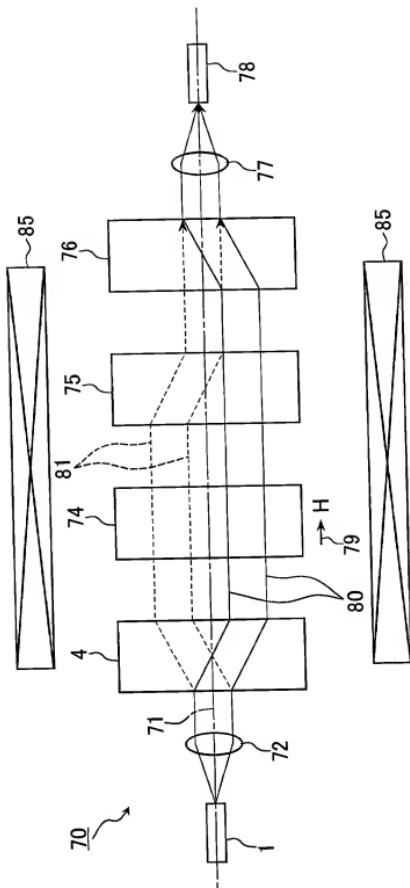


FIG. 7A

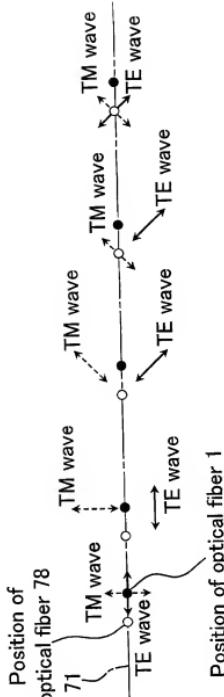


FIG. 7B

2020-02-08 <19T>00T

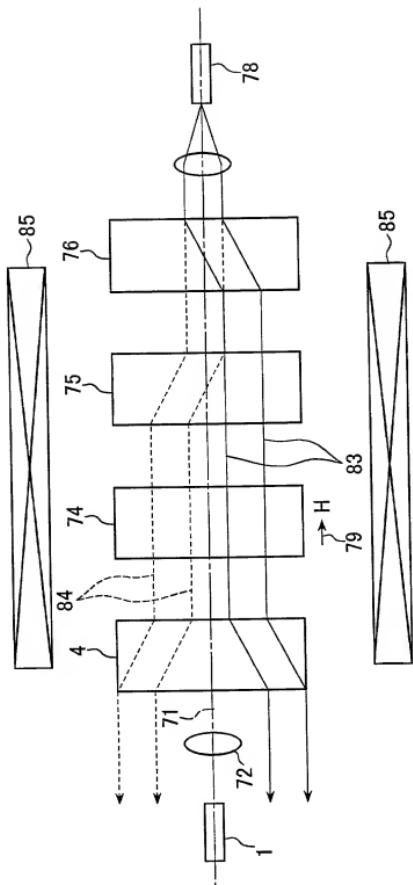


FIG. 8A

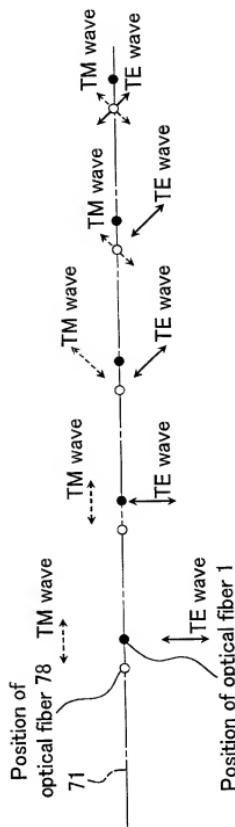


FIG. 8B

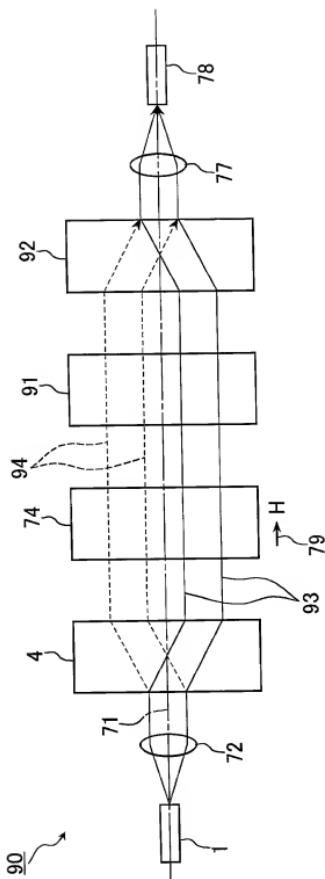


FIG. 9A

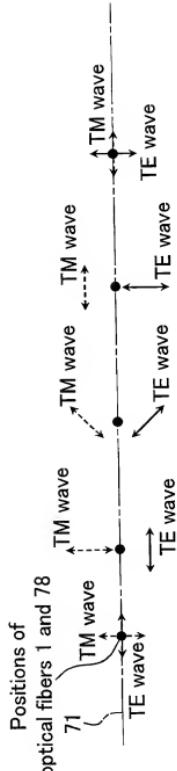


FIG. 9B

208020 " <TR9T<00T

Inventor: Hidenobu HAMADA
Docket No.: 10873.878US01
Title: OPTICAL DEVICE
Attorney Name: Douglas P. Mueller
Phone No.: 612-371-5237
Sheet 10 of 22

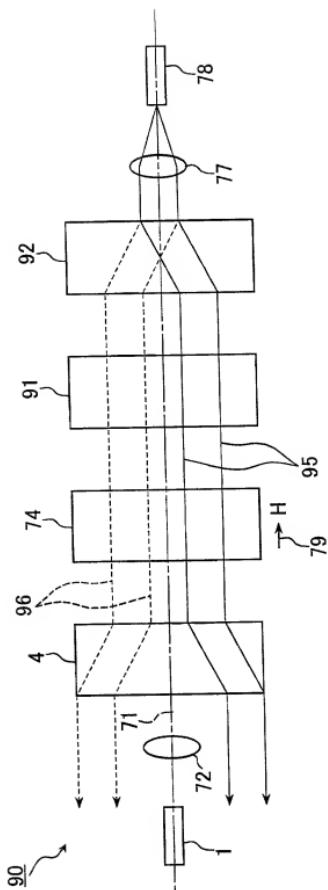


FIG. 10A

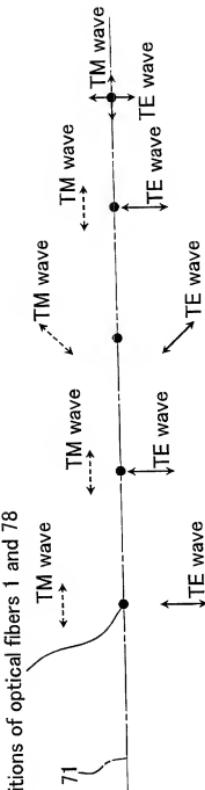
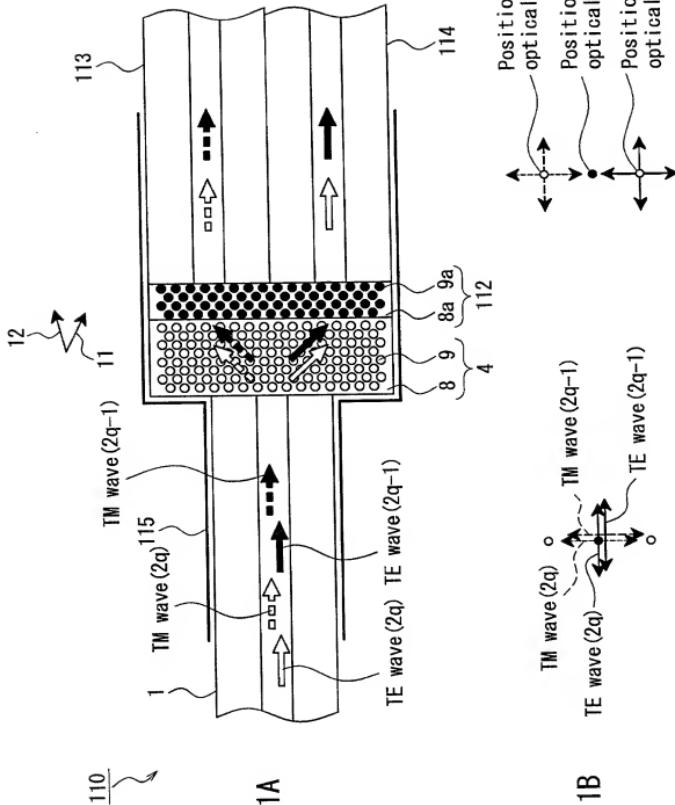


FIG. 10B

208020° < T9T<00T



208020 " <RIGHT>00T

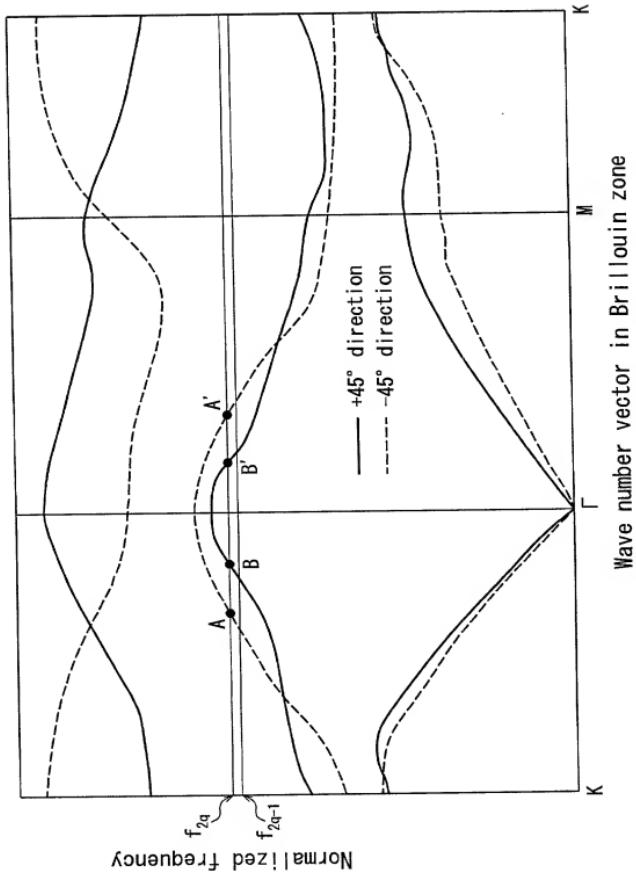


FIG. 12

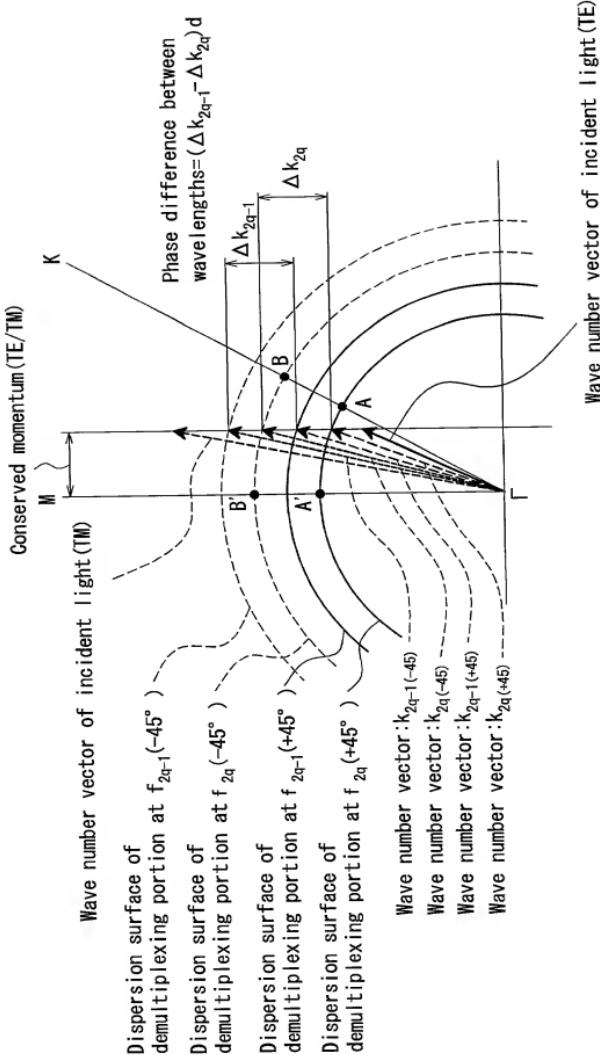


FIG. 13

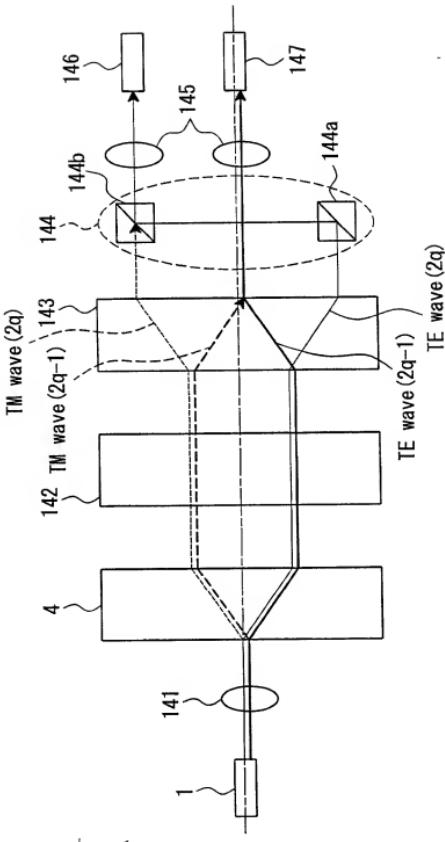


FIG. 14A

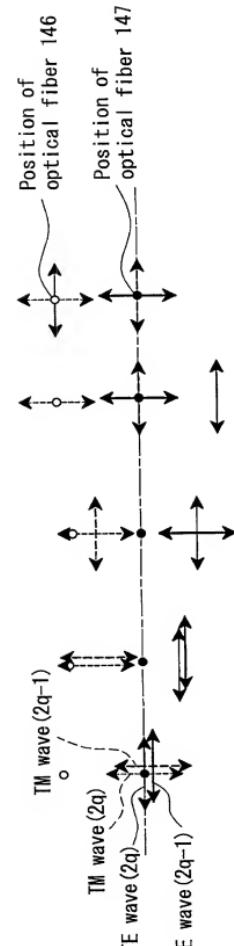


FIG. 14B

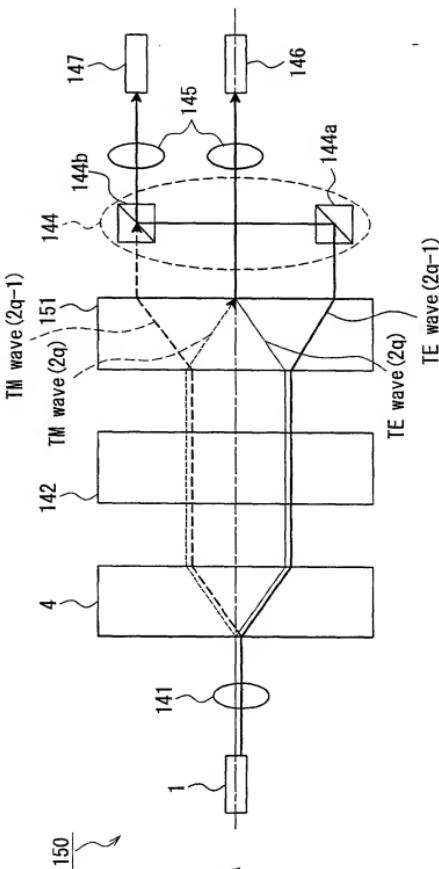


FIG. 15A

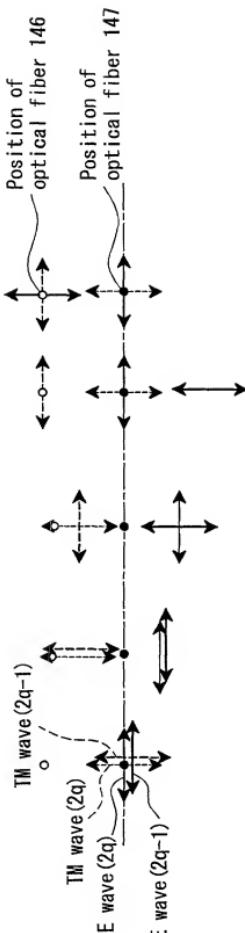


FIG. 15B

2008020 " <�9T>00T

Inventor: Hidesabu HAMADA
Docket No. 10873.8781US01
Title: OPTICAL DEVICE
Attorney Name: Douglas P. Mueller
Phone No.: 612 371.5237
Sheet 16 of 22

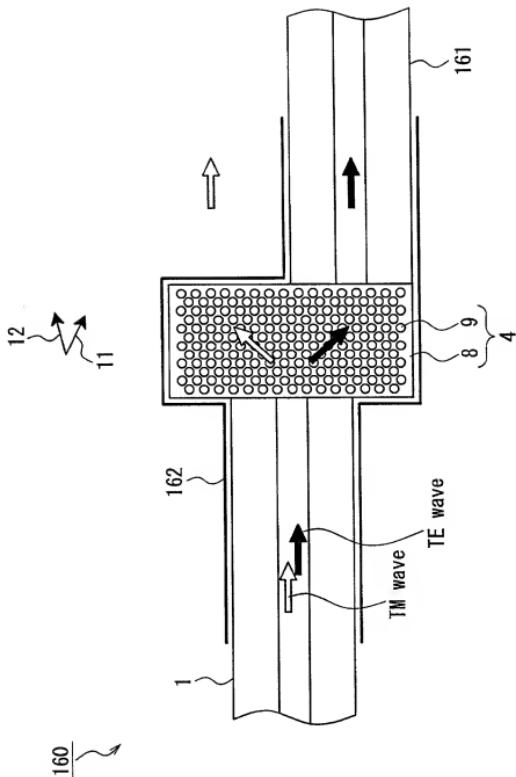


FIG. 16

202020" <991<001

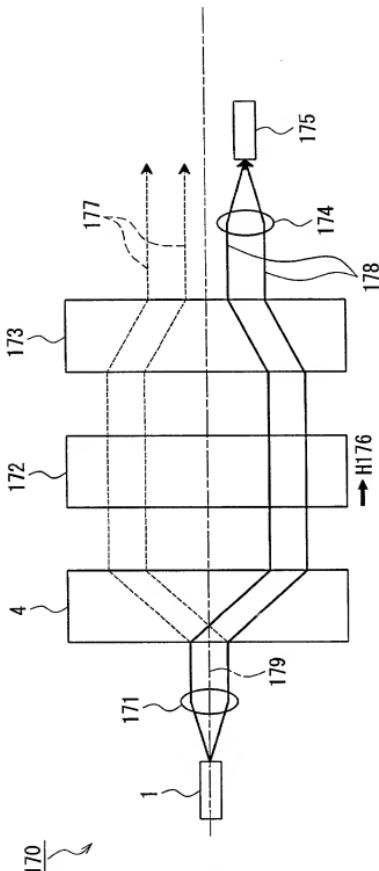


FIG. 17A

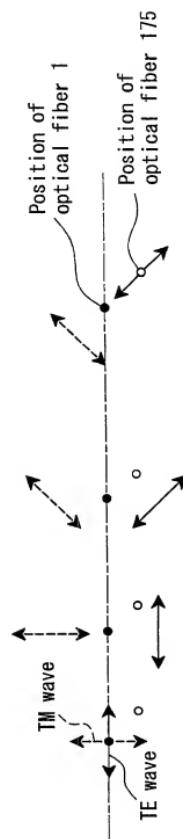


FIG. 17B

2020-07-19 10:00

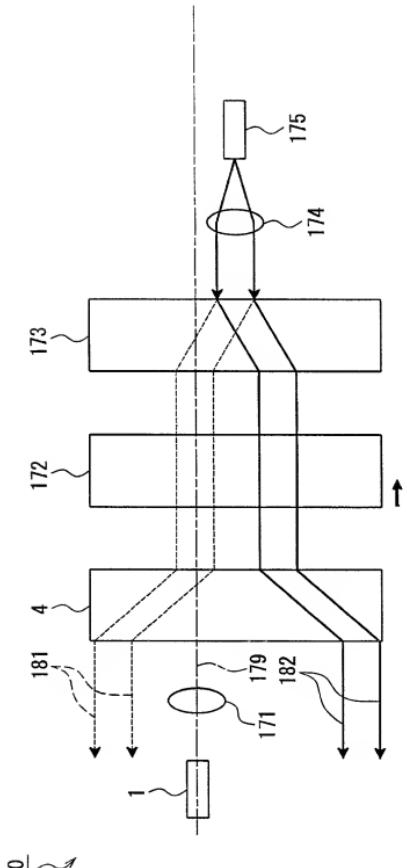


FIG. 18A

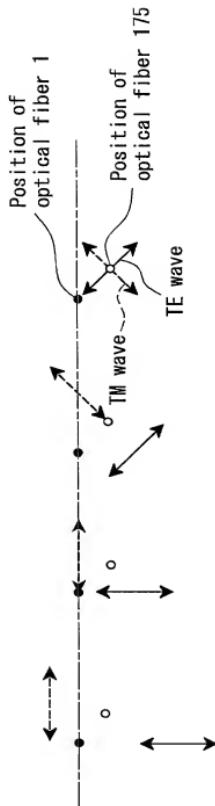


FIG. 18B

208020 " <1991<0001

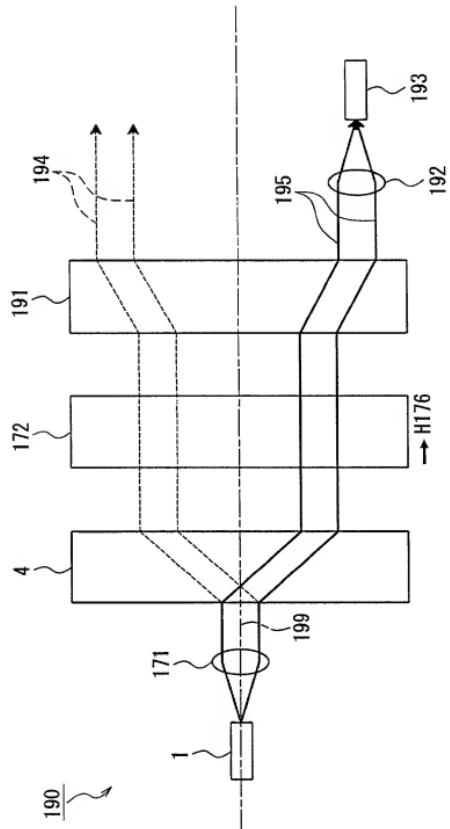


FIG. 19A

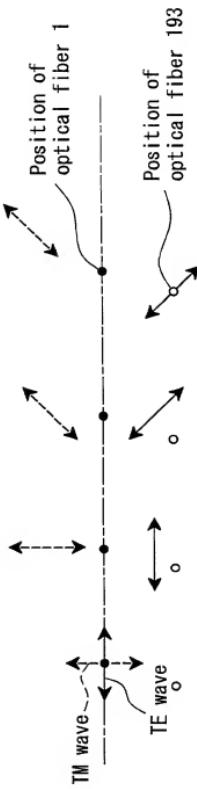
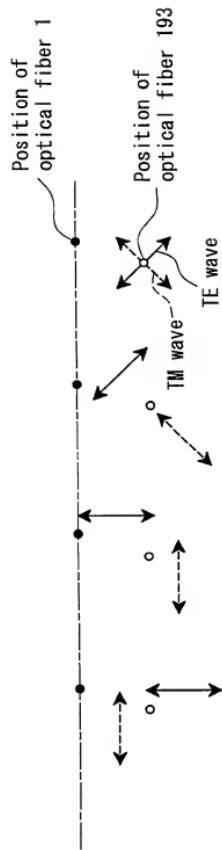
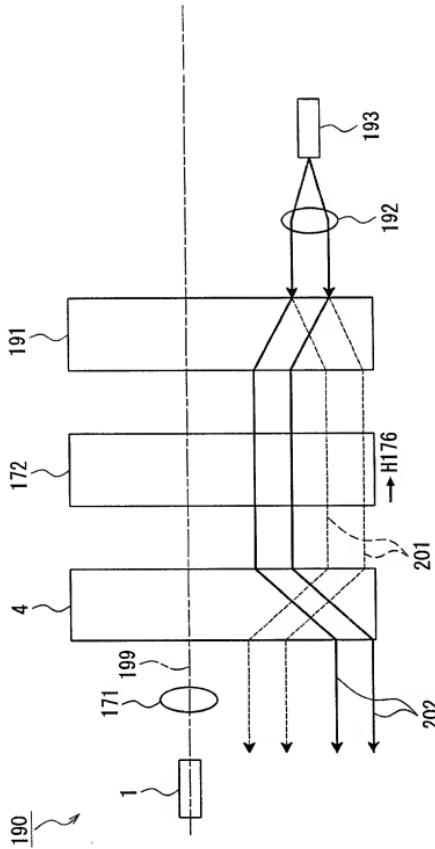


FIG. 19B

202020° < T9T < 00T



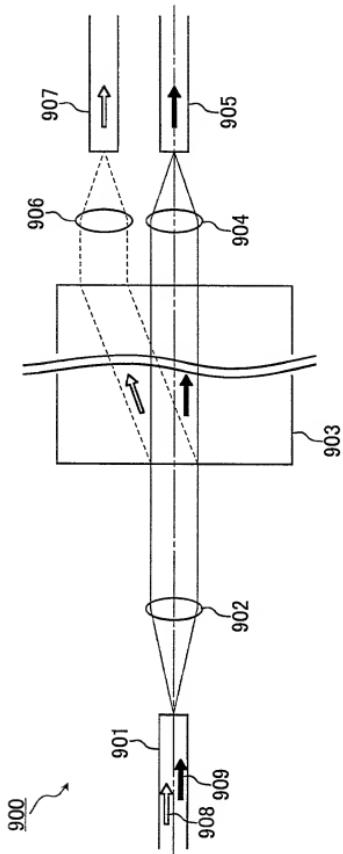


FIG. 21 (PRIOR ART)

2020-09-27 <T9T<000T

Inventor: Hidenobu HAMADA
Docket No.: 10873.878US01
Title: OPTICAL DEVICE
Attorney Name: Douglas P. Mueller
Phone No.: 612.371.5237
Sheet 22 of 22

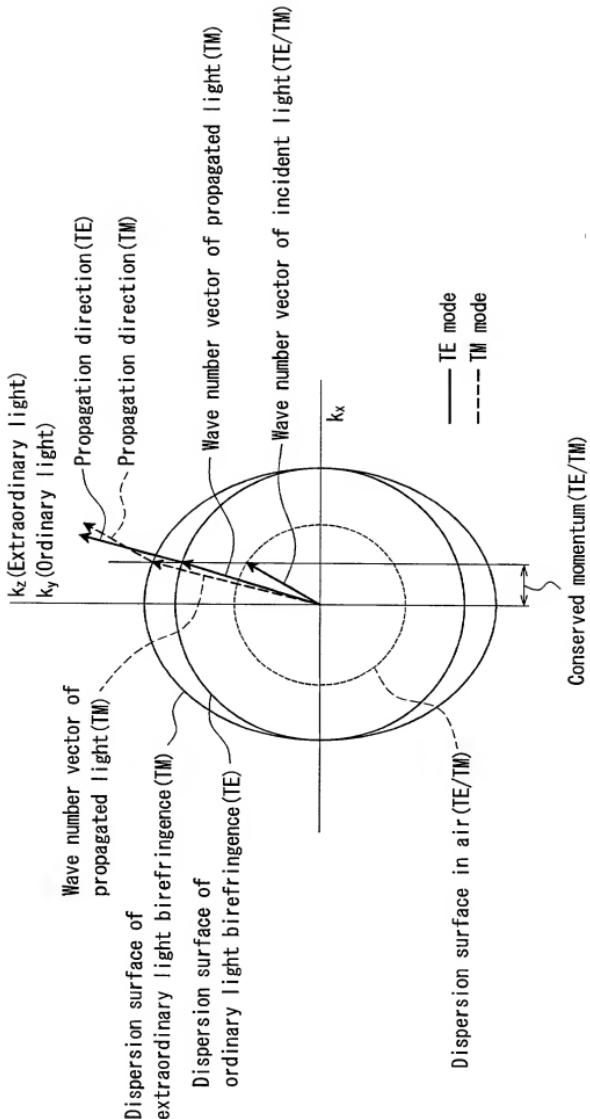


FIG. 22 (PRIOR ART)